

	National Defence Défense Nationale		Back to the DID List
DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES			
1. TITLE – TITRE NWS C&E Maint		2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION	
TECHNICAL ENGINEERING SUSTAINMENT INSPECTION (TESI) PLAN		DID 5.7.3.1	
3. DESCRIPTION / PURPOSE – DESCRIPTION / OBJET			
<p>The purpose of the Technical Engineering Sustainment Inspection (TESI) Plan is to provide a detailed description of the inspections to be conducted on all Radar, Communication and Ancillary equipment in the North Warning System.</p>			
4. APPROVAL DATE DATE D'APPROBATION	5. OFFICE OF PRIMARY INTEREST (OPI) BUREAU DE PREMIERE RESPONSABILITÉ (BPR)	6. GIDEP APPLICABLE D'ÉCHANGE DE DONNÉES PERTINENT	
July 2020	NWSO Technical Authority (TA)	N/A	
7. APPLICATION / INTERRELATIONSHIP – APPLICATION / INTERDÉPENDANCE			
<p>CDRL 5.7.3.1 and SOW paragraph 5.7.3.1 refer. This DID contains the format and content preparation instructions for the data generated under the work tasks described in the NWS O&M SOW.</p>			
8. ORIGINATOR - AUTEUR		9. APPLICABLE FORMS - FORMULES PERTINENTES	
NWSO TA		NIL	
10. PREPARATION INSTRUCTIONS – INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES			
<p>10.1 <u>Source Document</u> NWS SOW Section 5, paragraph 5.7.3.1</p> <p>10.2 <u>Content and Format</u></p> <p>10.2.1 The Technical Engineering Sustainment Inspection (TESI) Plan shall be prepared and delivered in Contractor format.</p> <p>10.2.2 The Technical Services Management Plan shall include inspections of:</p> <ol style="list-style-type: none"> Radar, communications and ancillary equipment; Condition of equipment; Tools and test equipment; Work areas; Technical documentation; Parts (storage and packaging); Safety (signage and personal protection equipment); and Grounding and bonding of Radar, Communication and Ancillary equipment. <ol style="list-style-type: none"> The grounding and bonding inspection shall include the following requirements: <ol style="list-style-type: none"> REFERENCES: <ol style="list-style-type: none"> AFI 21-116, 10 Dec 00; AFI 32-1063, 31 Mar 94; AFI 32-1065, 1 Oct 98; MIL-STD 188-124B, 1 Feb 92; MIL-HDBK 419A Vol II, 29 Dec 87; and 			

6. TO 31-10-24, Chg 4, 30 Nov 01.
- ii. **A. RECORDS, TEST EQUIPMENT, TOs, ETC:**
- A.1. Are facility grounding system historical records complete and current? (AFI 21-116, para 6.10; AFI 32-1065, para 4; MILHDBK 419A Vol II Para 2.3.1, 2.3.2);
- A.2. Is all required test equipment available and properly maintained in the work center and is the calibration current? (AFI 32-1065, Para 8; TO 31-10-24, Attachment B-1e); and
- A.3. Have all required inspections been scheduled? (AFI 32-1063, Para 7.5; AFI 32-1065, Table 1-1; MIL-STD 188-124B, para 5.1.1.1.7; MIL-HDBK-419A Vol II, Para 2.3.1)
- iii. **B. PHYSICAL CONDITION AND MODIFICATIONS:**
- B.1. Are all exposed interior fastenings, ground clamps, welded joints, air terminals and supporting members free of mechanical failure? (AFI32-1065, Para 9);
- B.2. Are all exposed conductors free of excessive wear? (AFI 32-1065, Para 10);
- B.3. Are all conductors and connectors free of corrosion? (MIL-STD188-124B, Para 5.2.3, 5.2.9);
- B.4. Are all exposed conductors free of sharp kinks or bends? (AFI32-1065, para A4.1.5; MIL-STD 188-124B, para 5.1.1.3.3, 5.1.1.3.8.5; TO 31-10-24, Para 7-6a);
- B.5. Are all lightning protection ground connectors of the bolted, crimped, brazed, or exothermically welded type (not soldered)? (AFI32-1065, para 10; MIL-STD 188-124B, para 5.1.1.3.4; MIL-HDBK 419A Vol II, Para 1.3.3.9, 1.7.1; TO 31-10-24, Para 7-4c);
- B.6. If ground wires are exposed to mechanical damage, are they protected by a suitable protective conduit or device? (AFI 32-1065, Para A4.1.8; MIL-HDBK 419A Vol II, Para 1.3.3.10; MIL-STD 188-124B, Para 5.2.3, 5.1.1.3.8.4);
- B.7. Is conduit, armoured cable, and metal raceway properly connected to the common ground? (MIL-HDBK 419A Vol II, Para 1.4.5; MILSTD 188-124B, Para 5.1.1.2.4.2, 5.1.1.3.10.1; TO 31-10-24, Para 8-3);
- B.8. Are all towers, poles, and other antenna structures grounded properly? (MIL-STD 188-124B, Para 5.1.1.3.2., 5.1.1.3.9);
- B.9. Are lightning arrestors installed on all antenna structures? (AFI32-1065, Table 1-1, Para 9; MIL-STD 188-124B, Para 5.1.1.3.8);
- B.10. Are telephone and overhead connectors entering or leaving structures provided with lightning arrestors? (AFI 32-1065, para 15; MIL-STD 188-124B, Para 5.3.2.6.);
- B.11. Are all lightning arrestors free of mechanical failure? (AFI 32-1065, Para 9); and
- B.12. Is NO-OX grease applied to welded, brazed and exothermic connections, as well as electrode connections, equipment cabinet or rack bonds, bus bar attachments, and associated hardware? (31-10-24, Para 4-10f).
- iv. **C. CRITICAL PERFORMANCE STANDARDS – MANDATORY EVALUATION ITEMS**
- C.1. Are maintenance inspections being performed on fixed facilities to include Base Civil Engineering providing copies of the completed forms to the facility user? (MIL-HDBK-419A Vol II, Para 2.3; AFI 32-1065, Para 5. and Table 1.9);
- C.2. Has new equipment grounding, bonding and shielding conformance been evaluated prior to installation and acceptance? (MIL-HDBK-419 Vol II, Para 3.7);
- C.3. Has Base Civil Engineering performed the MIL-STD-188-124A and NEC compliance evaluation? (MIL-HDBK-419A Vol II, Para 1.4.9);
- C.4. Are there at least two lightning protection down conductors on the building or structure, and are they as widely separated as practical? (TO 31-10-24, Para 7-6b; AFI 32-1065, Para A4.1.3);
- C.5. Is the semi-permanent grounding bond resistance, between equipment chassis and racks, 12 milliohms or less? (TO 31-10-24, Para 4-13C);
- C.6. Is the voltage between the grounded portion of the equipment to the earth ground system terminal 1 VAC or DC or less? (TO 31-10-24, appendix B-5);
- C.7. Is the site ground resistance for the facility 10 ohms or less? (AFI32-1065, Para A6.1; MIL-STD 188-124B, Para 5.1.1.1.3.1, 5.1.1.1.7; TO 31-10-24, Para 6-1a, appendix B-1);
- C.8. Are all waveguides to the antennas properly grounded? (MILSTD 188-124B, Para 5.1.1.3.8.5, MIL-HDBK 419A Vol II, Para 1.3.3.3; TO 31-10-24, Para 7-9);
- C.9. Do lightning protection air terminals provide a 1:1 (45 degree) cone of protection for C-E facilities? (TO 31-10-24, Para 7-2a, 7-8a);
- C.10. Are all lightning protection down conductors electrically continuous from air terminals to ground connections? (MIL-STD 188-124B, Para 5.1.1.3.8.4);
- C.11. Is the AC neutral insulated from the equipment chassis, case, and facility ground system except for one point at the facility power service entry? (MIL-STD 188-124B, Para 5.1.2.2.3, 5.1.1.2.5.1;

MIL-HDBK-419A Vol II, Para 1.4.6b, 1.4.9.2f(4)); and

C.12. With the circuit breaker open and the neutral disconnected, is a minimum of 1 megohm DC resistance measured between either side of the AC line and the equipment case (ground)? (MIL-STD 188-124B, Para 5.1.2.2.3; MIL-HDBK-419A Vol II, Para 1.4.9.2g).

- 10.2.3 The Technical Engineering Sustainment Inspection (TESI) Plan shall include inspection schedules for all LRR and standalone LSSs as well as the bi-annual requirement of SRR sites and the NWSCC or NWSSC requirement for that year.
- 10.2.4 The Technical Engineering Sustainment Inspection plan, complete with schedule shall be submitted not later than 15 January for approval by the NWSO TA. The plan shall be made available on-line five days after approval.
- 10.2.5 The Contractor shall create and manage work orders to detail corrective actions for all sites in the current years plan. No work orders to be open longer than one year.
- 10.2.6 Site records drawings will be confirmed and redlined on site as required and one copy will be left on site. The original drawings shall be amended as per redline changes.
- 10.2.7 All Technical Engineering Sustainment Inspections shall be carried out in accordance with the current approved plan.